Host country corporate income tax rate and foreign subsidiary survival

RESEARCH NOTE

Host Country Corporate Income Tax Rate and Foreign Subsidiary Survival

ABSTRACT

Host country tax considerations are critical to multinational enterprise (MNE) foreign direct investment decisions, but understudied in international business (IB) research. We address this gap by examining the relationship between host country corporate income tax rates (HCCITRs) and foreign subsidiary survival. We develop our hypothesis drawing upon location/country-specific advantage theory and international tax literature. Our longitudinal sample (1990-2013) comprises 13,468 MNE subsidiaries in 78 countries. Results indicate a one standard deviation (7.7%) decrease in HCCITR increases subsidiary survival probability (at any given time) by 33%. This effect is stronger compared to several well studied explanatory variables in IB survival analysis.

Keywords: Multinational Enterprise, Corporate Tax, Country Specific Advantage, Subsidiary, Survival

INTRODUCTION

There is substantial value in integrating the domains of finance and international business (IB), however, there is very little cross-disciplinary research across these fields (Puck & Filatotchev, 2018). A case in point is the impact of country corporate income tax rate on domestic firm performance, which is commonly studied in finance, accounting, and economics research (e.g., Desai & Dharmapala, 2009). However, its effect on multinational enterprise (MNE) foreign direct investment (FDI) in general and foreign subsidiary performance outcomes (e.g., survival, profitability) in particular, has been overlooked in most of the IB literature.

Foreign subsidiaries represent substantial resource and equity commitments from MNEs. Hence their survival is critical to MNE success and their termination is almost always an "extreme" case (Benito, 2005). Therefore, it is hardly surprising that examining the determinants of foreign subsidiary survival i.e., continuity or termination, has received considerable academic attention. Much extant literature has investigated factors at the MNE level such as firm size and international experience (e.g., Kim, Lu, & Rhee, 2012); at the subsidiary level such as subsidiary size and expatriate staffing (e.g., Gaur, Delios, & Singh, 2007); and at the country level such as GDP and cultural distance (e.g., Luo, Shenkar, & Nyaw, 2001).

A consistent and surprising omission from most prior foreign subsidiary survival analyses (which the authors are also guilty of), is the effect of host country corporate income tax rate (HCCITR). The HCCITR matters not just to foreign direct investment (FDI) location choice, but also to decisions involving foreign subsidiary survival. As Contractor (2016: 13) notes: "No decision in large multinational corporations is made these days without assessing tax implications. The extent to which global operations, supply chains, and location decisions are affected by tax considerations—places this issue at the heart of global strategy. *In large companies, executives consider tax angles concurrently with strategy, rather than as an afterthought. [Yet] Vanishingly few international business (IB) and strategy papers take taxes into consideration*" (italics added).

Our review of the MNE tax literature confirms Contractor's (2016) assertion that, despite the importance of taxes in IB decisions, surprisingly few IB papers take taxes into consideration (for exceptions see Brajcich, Friesner, & Schibik, 2016; Gokalp, Lee, & Peng, 2017; Jones & Temouri, 2016). We reviewed the 100 most recently published empirical papers on FDI by searching abstracts for "foreign direct investment" from June 2011 until February 2020 in the 8 most cited IB journals[1]. Of these, only 4 papers (i.e., 4%) included a tax variable. Further, we found no empirical research (from the year 2000 to date) that examines the relationship between HCCITR and foreign subsidiary survival or uses HCCITR as a control variable in subsidiary survival analysis.

Host country corporate income tax rate (HCCITR) can impact both foreign subsidiary location/continuity decisions as well as the level of investment. The former relates to the extensive margin, where a lower HCCITR would increase the probability of an MNE establishing/retaining a subsidiary in that country. The latter relates to the intensive margin, where a lower HCCITR would increase the intensity/level of an MNE's investment in a foreign subsidiary (e.g., by adding employees, increasing equity ownership, and acquiring assets) (Egger & Merlo, 2011).

HCCITR may impact foreign subsidiary survival for two reasons. First, MNEs may consider locating foreign subsidiaries in lower tax countries to reduce taxes paid on host country profits and to improve after-tax profits (Christmann, Day, & Yip, 1999). As mentioned above, MNEs are more likely to invest in and retain such subsidiaries due to improved profitability from country-specific tax savings. Second, as the finance, accounting, and economics literatures inform us, MNEs may also reduce corporate tax burdens by shifting profits among subsidiaries in different tax jurisdictions/countries through transfer pricing (Lin & Chang, 2010), debt shifting (Schjelderup, 2016), or intangible asset shifting (Dischinger & Riedel, 2011). For example, MNEs usually set higher internal transfer prices when exporting products to subsidiaries in countries with higher CITRs and set lower internal transfer prices when exporting products to subsidiaries in countries with lower CITRs, in order to minimize their overall income tax payables and maximize their overall after tax profits (Lin & Chang, 2010). To reduce tax burdens, they also generally move debt from subsidiaries located in low tax countries to subsidiaries located in high tax countries; and

move intangible royalty generating assets, such as patents and trademarks, from subsidiaries in high tax countries to subsidiaries in low tax countries (Dischinger & Riedel, 2011; Schjelderup, 2016). Hence, MNEs may be less likely to terminate an otherwise poorly performing subsidiary in a low CITR host country, to maintain profit shifting channels (for example through intangible asset shifting), that enhance overall MNE performance.

Accordingly, this research note investigates the impact and explanatory power of host country corporate income tax rate (HCCITR) on foreign subsidiary survival; and makes the following contributions. It informs location-specific or country-specific advantages (LSAs/CSAs) theory (Dunning, 1998, 2000; Rugman, 1981, 2010) by considering how FDI outcomes are impacted by host-country specific corporate tax rates. In contrast, extant literature on location based tax advantages is focused on the antecedents of "tax-haven" FDI (e.g., Jones & Temouri, 2016; Oxelheim, Randoy, & Stonehill, 2001). It demonstrates that accounting for HCCITR is theoretically pertinent and empirically necessary (in IB performance/survival analysis research), so that an omitted variable problem is avoided; and the effect of other independent variables is not biased, confounded, or inflated (Nielsen & Raswant, 2018). We find that the effect of HCCITR on foreign subsidiary survival is not only significant, but also stronger than several other explanatory variables such as subsidiary size, MNE size, cultural distance, and host country GDP growth that have been consistently used in IB survival analysis research. While our study is exploratory, the results provide an important large sample baseline to inform subsequent research on host country tax rates and FDI outcomes.

THEORY AND HYPOTHESIS

The eclectic (OLI) paradigm has long recognized the importance of location-specific advantages (LSAs) to MNE FDI, in addition to firm-specific advantages (FSAs) and internalization advantages (Dunning, 1998, 2000). LSAs refer to host country or host location factors such as market demand, natural resources, human capital, advanced infrastructure, and lower operational costs (that differ among countries/locations); and have also been referred to as country-specific advantages (CSAs) (Rugman, 2010). CSAs/LSAs additionally include government institutions and regulations that favor inward FDI by

providing incentives, protecting intellectual property rights, and reducing red-tape (Brouthers, 2002, Dunning, 2000). Dunning and Lundan (2008: 585) refer to the latter CSAs/LSAs as "institutionally related location advantages of countries". Lower host country corporate income tax rates (HCCITR) are an example of such government institutions/regulations that encourage inward FDI. Oxelheim et al. (2001) consider lower HCCITR as finance-specific location advantages. Thus, based on the above, we consider lower HCCITR as a finance-related regulatory/institutional CSA (Dunning, 2000; Dunning & Lundan, 2008; Oxelheim et al., 2001).

Firms that benefit from CSAs generally improve their economic outcomes and competitive advantage (Dunning, 2001). For instance, using a sample of 99 subsidiaries across 37 countries, Christmann, Day, and Yip (1999) found that host country characteristics significantly impact foreign subsidiary gross margins. Using a much larger sample of nearly 27,000 subsidiaries across 150 countries, Makino, Isobe, and Chan (2004) found that host country effects attributable to CSA differentials explain 5.5% of the variance in subsidiary profit margin.

There are two key mechanisms through which lower HCCITR can improve a foreign subsidiary's survival likelihood, namely increased focal subsidiary profitability and profit-shifting. We elaborate on each of these below. The first involves improvement in a foreign subsidiary's after tax profitability due to lower HCCITR. MNEs are known to locate important economic activities and/or increase investment in lower tax countries to benefit from tax savings and thus higher profits. Hence, in recent years, several national governments (e.g., the UK, Ireland, and recently the US) have reduced corporate taxes in order to stimulate their economies, and attract foreign investments (Semuels, 2016). De Mooij and Ederveen (2003) found that a 1% decrease in HCCITR is linked with a 5.7% increase in plant FDI in that host country. Clausing (2009) found that a similar reduction in HCCITR increases MNE host country employment by 1.6%, sales by 2.9%, assets by 4.8%, gross income by 5.2%, and profitability by 0.5%. Thus we can reasonably infer that driven by tangible profitability gains from lower HCCITR, MNEs are more likely to invest in (rather than divest) foreign subsidiaries in those host countries, which improves subsidiary survival prospects. Research also indicates that while foreign subsidiary profitability and its

survival are distinct measures, they are generally correlated (Delios & Beamish, 2001; Makino, Beamish, & Zhao, 2004). Hence, we posit that increased profitability from lower HCCITRs increases the possibility of investment in a foreign subsidiary and accordingly improves its likelihood of survival.

The second mechanism entails profit shifting through channels such as, transfer pricing, debt shifting, and intangible asset shifting, by which foreign subsidiaries in lower HCCITR countries can help MNEs reduce their overall tax burden and improve corporate financial performance. Analyzing MNE profit shifting, Heckemeyer and Overesch (2017) found that a 1% decrease in HCCITR is associated with a 0.8% increase in a subsidiary's pre-tax profits in that host country. They also found that about two thirds of profits are shifted through non-financial channels (e.g. transfer pricing) and about one third is shifted through financial channels (e.g. debt shifting). Analyzing transfer pricing, Klassen, Lisowsky, and Mescall (2017) found that a firm focusing on minimizing taxes through transfer pricing, has an effective tax rate that is 6.6 percentage points lower and generates about $43 million more in tax savings, on average. Analyzing debt shifting, Desai, Foley, and Hines Jr (2004a) found that internal MNE lending is particularly sensitive to country tax rates with lower HCCITR affiliates lending to (and charging interest from) subsidiaries in higher tax jurisdictions (a 10% increase in HCCITR is associated with a 2.8% increase in debt/asset ratio). Analyzing intangible asset shifting, Dischinger and Riedel (2011) found that on average, a 10% decrease in a subsidiary's HCCITR raises its intangible asset investment (e.g., R&D, patents) by about 11%. This suggests that MNEs exploit HCCITR differentials between foreign subsidiaries using mechanisms such as transfer pricing, debt shifting, and intangible asset shifting to decrease their tax burden and improve corporate profitability.

Research shows that tax management practices such as the above are, on average, positively related to firm value (Desai & Dharmapala, 2009; Minnick & Noga, 2010). Highlighting the importance of tax management, many firms designate their tax departments as profit centers, with goals that correspond to decreasing tax liabilities and increasing net corporate income (Robinson, Sikes, & Weaver, 2010). Moreover, Armstrong, Blouin, and Larcker (2012) found a relationship between firm profitability

and use of "tax shelter" mechanisms. They also showed that the more profitable a firm is, the greater the gap between its book and taxable income (their proxy for tax management).

Two scenarios illustrate how profit shifting to subsidiaries with low HCCITRs benefits MNEs. In the transfer pricing scenario, when exporting products to a subsidiary in a country with a relatively lower CITR, the transfer price is set at a lower level (Lin & Chang, 2010), which reduces revenues for the exporting subsidiary and reduces costs for the importing subsidiary. In the intangible asset shifting scenario, an MNE would shift its intangible intellectual property (e.g., patents, copyrights, trademarks, brands, licenses, etc.) to a subsidiary with a relatively low HCCITR that charges royalties to other operating subsidiaries worldwide (Dischinger & Riedel, 2011). In both cases, doing so shifts profits to the focal subsidiary in the low HCCITR country, thus increasing an MNE's overall tax savings and profits.

A key reason why companies such as Nestle, Procter & Gamble, and Siemens have low effective tax rates is due to their tax-optimized set-up of multinational operations (Avi-Yonah & Lahav, 2012). Hence, in making retention/termination decisions, all else being equal, MNEs may be more likely to retain subsidiaries in countries with lower CITRs to maintain profit shifting channels that enhance their overall corporate performance, even when these subsidiaries are unprofitable or loss-making. As De Simone, Klassen, and Seidman (2017) find, all else being equal, MNEs generally shift more profits to loss-making subsidiaries than to profitable subsidiaries, since the former behave as temporary low tax rate subsidiaries because they can have a marginal tax rate much lower than the statutory HCCITR. By retaining such unprofitable or loss-making subsidiaries, MNEs follow a 'shift-to-loss' strategy in addition to the traditional 'shift-to-lower tax' strategy to save taxes and increase actual profits, by reporting lower profits in the profitable subsidiaries and smaller losses in the loss-making affiliates (De Simone, et al., 2017).

In summary, the above suggests that (lower) HCCITR may be considered a country specific advantage (CSA); and that MNEs are more likely to invest in and retain such subsidiaries due to improved profitability from country-specific tax savings and use of profit shifting channels to increase overall/worldwide corporate profits. Further, all else being equal, MNEs may be more likely to retain

subsidiaries in lower HCCITR countries, even when these subsidiaries are not performing well, to maintain profit shifting channels that enhance overall corporate financial performance.

Hypothesis 1: The *lower (higher)* a foreign subsidiary's host country corporate income tax rate (HCCITR), the *higher (lower)* is its likelihood of survival (i.e., the *lower (higher)* is its likelihood of exit).

METHODS

Data and Sample

We tested the hypothesis using a large longitudinal sample comprising 13,468 unique foreign subsidiaries of 1,712 Japanese MNEs in 78 countries from 1990-2013 (96,060 subsidiary-years or observations). Following Desai, Foley, and Hines Jr (2004b), we excluded affiliates in which the Japanese parent owned less than 10% equity, since these are usually considered portfolio investments where the MNE exercises little strategic or operational influence. Our dataset was compiled from the Toyo Keizai (TK) Japanese subsidiary data, NEEDS Japanese parent data, Centre d'Etudes Prospectives et d'Informations Internationales (CEPII) geographic distance data, TaxFoundation.org data, OECD Tax data, Ernst and Young (EY) Tax data, Trading Economics Tax data, and economic and governance data from the World Bank, International Monetary Fund (IMF), and International Labor Organization (ILO). Using the TK and NEEDS databases is appropriate for our study since they provide near population level data on Japanese MNEs and their foreign subsidiaries worldwide.

Variables

Dependent variable. Subsidiary Survival/Exit: Following previous studies on subsidiary survival/exit (Dhanaraj & Beamish, 2004), our dependent variable (DV) is an indicator that takes a value of 1 if subsidiary x exits at time t, and 0 if it survives. Observations start in 1990 and continue until an exit occurs, or they are right-censored in 2013. For the period 1990-2013 there were 2,924 exits out of

13,468 foreign subsidiaries of 1,712 MNE parents and a total of 96,060 observations (i.e. subsidiary-years).

Independent variable. Host Country Corporate Income Tax Rate (HCCITR): We collected the data on statutory HCCITRs for each of the 78 countries by year between 1990 to 2013 from multiple sources. The main source for the HCCITRs was TaxFoundation.org, which provided the CITRs for most countries and most years. For missing data, we used tax data available from OECD, Ernst and Young (EY), and Trading Economics. We also used these multiple sources to validate the data and ensure consistency among the different sources. We did not find discrepancies in the reported statutory CITRs by country/year across multiple sources.

Control variables. We controlled for several variables, which the literature suggests may be possible alternative explanations for subsidiary survival/performance. We were guided also by a recent meta-analysis of foreign subsidiary performance that identified significant known effects (Bai, Du, & Solarino, 2018). *First, at the subsidiary level*, we controlled for Subsidiary Age, Subsidiary Size, Expatriate Number, Subsidiary Diversity, Parent Equity Ownership, and Subsidiary Sector. We controlled for Subsidiary Age (Fang, Wade, Delios, & Beamish, 2013) to account for the possible effects of the liability of newness and the ability of older subsidiaries to adapt to host-country conditions on subsidiary survival. It was measured as the number of years a subsidiary has operated since its date of establishment. We controlled for Subsidiary Size (Demirbag, Apaydin, & Tatoglu, 2011) to account for liabilities of smallness and structural inertia. It was measured as the total number of subsidiary employees. Consistent with Plourde, Parker, and Schaan (2014) we measured expatriate number as the number of expatriates in the subsidiary. In regard to subsidiary diversity, we used Dunning's (1998) classification to categorize a subsidiary's investment purpose into five categories (i.e., resource-seeking, efficiency-seeking, market-seeking, strategic asset seeking, and other). We then adopted the widely used entropy measure[2] to compute subsidiary diversity scores for each subsidiary (as per Getachew & Beamish, 2017). Consistent with Lu and Hebert (2005) we measured parent equity ownership as the percentage of the focal subsidiary's equity owned by the Japanese MNE with the largest equity in the subsidiary. We controlled

for Subsidiary Sector (Tang & Rowe, 2012). We classified subsidiary sector into three groups and operationalized it as a categorical variable (manufacturing = 1, trade = 2, and services & others = 3).

Second, at the parent (MNE) level, consistent with previous research, we controlled for Parent Size (Lu & Xu, 2006), Parent Performance (Delios & Makino, 2003), Parent International Experience (Lu & Beamish, 2004), and Parent Sector (Gong, 2006). We measured parent size by the number of parent employees and measured parent performance as the return on assets of the parent. We operationalized parent international experience in a given year as a composite of the count of an MNE's foreign subsidiaries and a count of the number of countries where an MNE had subsidiaries (Lu & Beamish, 2004). We divided each count by its maximum value in the sample and our composite measure is the average of the two ratios. In a similar manner to subsidiary sector, we operationalized parent sector as a categorical variable (manufacturing = 1, trade = 2, and services & others = 3).

Third, at the country level, we controlled for Host Country Size (Chung, Lu, & Beamish, 2008), Host Country GDP Growth Rate (Chung et al., 2008), Host Country Inflation Rate (Sayek, 2009), Host Country Debt to GDP ratio, Host Country Governance, and Cultural Distance. We measured Host Country Size as the host country per capita gross domestic product (GDP per capita in US $); Host Country GDP Growth Rate as the percentage change in host country GDP per capita from the prior year to the focal year; Host Country Inflation Rate as the annual GDP Deflator (%); and Host Country Debt to GDP ratio as a host country's central government debt expressed as a percentage of its GDP.

We controlled for Host Country Governance to account for differences in governance systems across host countries and its impact on FDI decisions (Esteller-Moré, A., Rizzo, L., & Secomandi, R., 2020). We measured it using the six World Bank Governance Indicators (WGBIs) i.e., Control of Corruption, Government Effectiveness, Political Stability, Regulatory Quality, Rule of Law, and Voice and Accountability, which rank all countries on a scale from 0-100 on each of the six variables. Following Hoffman, Munemo, and Watson (2016), we conducted a principal component analysis across the six indicators. These six dimensions have been found to be highly inter-correlated and an eigen-value cut-off of 1 provided a single principal component. Hence, we averaged the indicators by country to compute a

single measure of Host Country Governance. Our dataset spans from 1990 to 2013. However, the WBGIs are available starting 1996. Thus, in order to retain data prior to 1996, we followed Feeny and McGillivray (2010) and used the value of the WBGIs for 1996 in years prior to 1996. This is justified on the grounds that no other data are available and that the level of governance usually varies very little through time (Feeny & McGillivray, 2010).

We controlled for the effect of Cultural Distance between home and host country on subsidiary survival (Dhanaraj & Beamish, 2009), by using a generalized version of the Kogut and Singh (1988) cultural distance index. With Japan as the home (reference) country, we computed a composite measure across the four Hofstede dimensions of Power Distance, Individualism, Masculinity, and Uncertainty Avoidance.

RESULTS

We use an extended Cox proportional hazard regression model (Kleinbaum & Klein, 2005) to test our hypothesis. Cox regression is commonly used in subsidiary survival/exit analysis (e.g., Gaur & Lu, 2007; Getachew & Beamish, 2017) and an extended model is appropriate because the covariates are time-varying. When MNEs have more than one subsidiary, these subsidiary observations are not independent, rather they are nested within MNEs. Hence, in our regression, we cluster subsidiaries by MNE to account for the number of clusters in the sample and to ensure that a few MNEs do not drive our effects. Such clustering creates robust standard errors and makes our claims more generalizable. We standardized all predictors to reduce the issue of multicollinearity (Aiken & West, 1991).

To alleviate potential endogeneity concerns such as omitted variables or measurement errors that may be correlated with both HCCITR and subsidiary survival/exit, we also use a two stage least squares approach (2SLS) that is applicable to Cox regression (Tchetgen, Walter, Vansteelandt, Martinussen, and Glymour, 2014). To implement 2SLS, in the first stage, we regress HCCITR on an instrumental variable and all control variables. We then use the predicted (fitted) value of HCCITR from the first stage in the second stage Cox regression model.

Our instrumental variable is Social Protection Expenditure (SPE) as a percentage of GDP (obtained from the ILO). We justify the selection of this instrumental variable as follows. A host country with high social protection expenditure is likely to have high corporate income tax rates, but host country SPE is unlikely to directly affect foreign subsidiary survival/exit. This logic aligns with that of Gan & Qui (2019), who used a similar variable (Public Social Expenditure to GDP) to instrument for the effect of host country tax competitiveness (Debt to GDP ratio) on stock market returns following cross-border acquisition announcements.

While our dataset spans from 1990 to 2013, the SPE data is available starting 1995. As with the WGBI data for our Host Country Governance measure, to retain data prior to 1995, we used the value of SPE in 1995 for prior years. We also averaged data over preceding and succeeding years to fill in missing data for specific years.

Insert Table 1 about here

Table 1 presents descriptive statistics and Pearson correlations for the variables in the survival analysis. The average variance inflation factor (VIF) for all covariates was 1.75 and the VIFs for individual variables were well below the commonly used cutoff value of 10. This suggests that our analysis is not susceptible to multicollinearity (Kutner, Nachtsheim, & Neter, 2004).

Insert Table 2 about here

Table 2 presents the survival analysis results. Model 1 is the baseline model and includes all control variables. Model 2 tests Hypothesis 1 by adding the host country corporate income tax rate (HCCITR) variable. Model 3 is the first stage 2SLS regression and Model 4 tests Hypothesis 1 using the fitted (predicted) value of HCCITR from the first stage. Model 2 and Model 4 results are remarkably consistent in terms of the directionality and size of the coefficients for HCCITR and other variables. A

propensity matching procedure (see Robustness Check section that follows) further allays endogeneity/self-selection concerns. Hence, we chose to retain Model 2 as our main specification. Doing so also enables us to compare explained variance (e.g., R-square) with Model 1, since the estimate of HCCITR used in Model 4, does not facilitate a meaningful comparison. The change in Chi-square from Model 1 to Model 2 is significant ($p < 0.001$), suggesting that Model 2, which includes HCCITR significantly adds explanatory variance to Model 1. An R-squared type measure of explained variation ($R2d^3$) applicable to Cox regression (Royston, 2006), computes to 0.222 for Model 1 and 0.274 for Model 2, indicating that HCCITR accounts for about 5% of the variance in subsidiary survival/exit. Model 2 results support Hypothesis 1 and show that a subsidiary operating in a country with a lower CITR is more likely to survive (or less likely to exit) than its counterpart operating in a country with a higher CITR (HCCITR: $p < 0.001$, β is positive). The hazard ratio (HR = 1.33) suggests that a one standard deviation (i.e. 7.7%) decrease in HCCITR increases subsidiary survival likelihood (at any given time), by 33% (1.33-1 = 0.33), or decreases subsidiary exit likelihood by 33%.

Robustness Checks

Endogeneity. To further alleviate self-selection bias concerns, we also employed propensity score matching (Dehejia & Wahba, 2002; Rosenbaum & Rubin, 1983) to identify counterfactual cases of matching subsidiaries and obtain a "quasi-experimental" randomized sample. We identified high corporate income tax rate (CITR) host locations (treatment group) and low CITR host locations (control group) based on the median tax rate. Following Getachew and Beamish (2017), we formed matched groups of subsidiaries by estimating propensity scores across the following covariates: subsidiary age, subsidiary size, parent size, and parent equity ownership. A t-test of means for each covariate by group indicated no statistically significant differences, suggesting that our matching procedure is sound. We identified 5,207 treatment and 3,427 control subsidiaries (a total of 8,634); and since the full sample comprises 13,468 subsidiaries, these numbers are reasonably representative. The results (treatment effects) for the matched sample are significantly and directionally robust with the full sample, hence allaying self-selection/ endogeneity concerns.

Profitability. We contend that poor financial performance may not translate to subsidiary exit if there are transfer pricing/debt shifting/intangible asset shifting advantages to low-tax locations. Research has indeed shown that foreign subsidiary survival and profitability are correlated, yet distinct, and may have different antecedents (Delios & Beamish, 2001). To ascertain the robustness of the tax effect while controlling for financial performance, we included subsidiary profitability as an additional control variable. We used a three-level measure, with profitability coded as either "profitable" (3), "break-even" (2), or "unprofitable" (1), based on TK survey data, which requests subsidiary managers to categorize annual financial profitability. This measure has been used repeatedly in numerous studies (e.g., Fang et al., 2013; Makino & Delios, 1996), and its content validity has been established (Isobe, Makino, & Montgomery, 2000). Due to missing profitability data, inclusion of this variable reduced the sample to 6,383 subsidiaries. We found that while lower profitability increases the likelihood of subsidiary exit, the effect of host country corporate income tax rate (HCCITR) on survival/exit with the smaller sample remains significant, substantive, and directionally consistent with the full sample.

Tax havens. We sought to also differentiate between subsidiaries that engage in actual economic activity and those set-up in "tax havens" for profit shifting purposes. Using a list of 52 tax haven countries (Hines, 2010), we found that less than 12% of the subsidiaries in our sample are located in these countries. Excluding these observations did not alter the effect (size or significance) of HCCITR on subsidiary survival. Table 3 lists the percentage of sample subsidiaries by country with tax havens highlighted.

Country fixed effects. We attempted to add fixed effects by country to our regression model. However doing so resulted in the omission of Cultural Distance, since this measure is also time-invariant (by country) and hence perfectly collinear with country fixed effects. Regression with country fixed effects absent Cultural Distance provided results consistent with our original model. Hence, we present results by retaining Cultural Distance (rather than country fixed effects).

Collinearity. Table 1 indicates that the control variables host country size (GDP) and host country governance are strongly correlated (0.83). These variables are conceptually distinct; their standard errors

and VIFs do not show substantial evidence of collinearity; and research suggests that even if it exists, collinearity between control variables may be ignored (Allison, 2012; Nielsen & Raswant, 2018). Nevertheless, as a robustness check, we tested our hypothesis by excluding one of them (but including the other) in the regression model. In the absence of host country size, the effect of host country governance is consistent, however when the latter was excluded, the effect of host country size becomes significant. In either case, the effects of other variables, including the independent variable of interest (HCCITR) remain consistent with the full model. We did a similar check with host country debt to GDP and host country size (correlation 0.47), since they are mathematically related. Excluding either of them did not alter their individual effects or the effects of other variables in the regression model.

Subsidiary size. Subsidiaries with few employees may be just agencies or sales offices or profit shifting channels, rather than viable subsidiary organizations engaging in substantial economic activity (Beamish & Inkpen, 1998). As a robustness check, we tested the hypothesis after excluding subsidiaries with less than 20 employees. The results with the reduced sample (9,213 subsidiaries) are consistent with the full sample.

Parent equity ownership. While we excluded subsidiaries in which the Japanese parent owns less than 10% equity, a more conservative threshold to ascertain if the MNE exerts sufficient influence is 20% (Choi & Beamish, 2004; FASB, 1999). Increasing the minimum equity level to 20% reduced sample size (to 13,209 subsidiaries) but the results remain robust.

DISCUSSION

This research note aims to rectify the omission of host country corporate income tax rate (HCCITR) from foreign subsidiary survival analysis. We explain why HCCITR is critical to FDI decisions and outcomes and how (lower) HCCITRs may be considered a country specific-advantage. We suggest that lower HCCITR improves subsidiary survival prospects since it reduces tax burden and improves post-tax profitability – which research has found to be correlated with subsidiary survival (e.g., Delios & Beamish, 2001; Gaur & Lu, 2007). Additionally, we argue that all else being equal, MNEs may

be less likely to terminate (poor performing) subsidiaries in host countries with lower CITRs, since they may aid profit shifting between subsidiaries leading to an increase in overall MNE profitability.

Our intention was first to examine if HCCITR significantly affects foreign subsidiary survival/exit and second to compare its effect size to other explanatory variables such as cultural distance, MNE size, subsidiary size, and host country GDP growth, that are consistently used in subsidiary survival analysis literature. Based on prior reviews and meta-analyses (Bai et al., 2018; Nguyen, 2011), our model also included other known effects regularly controlled for in foreign subsidiary performance/survival analysis. Using a large longitudinal sample of over 13,000 unique subsidiaries, we find a significant and substantial effect of HCCITR – a one standard deviation (SD) decrease in HCCITR (7.7%) increases subsidiary survival likelihood (at any given time) by 33%. This effect is relatively stronger compared to several consistently used variables in subsidiary survival analysis. These include home to host country cultural distance – one SD decrease corresponds to a 5% increase in survival likelihood; MNE size (Parent Employees) – one SD decrease corresponds to a 14% increase in survival likelihood; subsidiary size (subsidiary employees) – insignificant; and host country GDP growth rate – insignificant.

Contributions

This paper (re)introduces international corporate taxes as an important yet understudied factor in MNE decisions. It empirically demonstrates the significant and substantive effect of host country corporate income tax rate (HCCITR) on foreign subsidiary survival. There is little integrative research across the fields of finance and IB, despite strong benefits (Puck & Filatotchev, 2018), and our study helps progress such cross-disciplinary research. Although international corporate income tax decisions are at the heart of global strategy and FDI location decisions, most research in the area is being published in finance, accounting, and economics journals, and rarely finds its way into IB and strategy journals (Nebus, 2016). Further, while such extant literature is focused on FDI location choice and impact on government tax policies (Clausing, 2009), our work relates to FDI outcomes and informs IB theory on location/country-specific advantages (LSAs/CSAs) (Dunning, 1998; Rugman, 1981, 2010). Empirically, this paper provides a pertinent example of a theoretically important and empirically/statistically

significant control variable HCCITR, which has been missing from most IB performance/survival analysis studies. As Nielsen and Raswant (2018) point out, inclusion of such variables are critical to avoid errors of omission and bias in IB research, which is particularly sensitive to the omitted variable problem due to the complexity of spanning multiple environmental contexts. Hence, as a starting point, we suggest that HCCITR be consistently used as a control variable in future IB survival/performance analysis research and results from our exploratory study provide a large sample baseline to inform such research.

Future Research Avenues

In this research note, our intent is to highlight the importance of an understudied variable i.e., HCCITR to MNE strategic decisions and hence we consider a single hypothesis regarding the HCCITR to subsidiary survival relationship. In the context of the eclectic paradigm (Dunning, 1988; 1992), we also recognize and control for several MNE-level ownership advantages that are known to impact subsidiary survival. Future research may theoretically consider and empirically examine if/how some of these (control variables) may moderate the relationship between HCCITR and subsidiary survival. For instance, high-performing MNEs may be less likely to restructure their subsidiary portfolio (Hoskisson & Turk, 1990) and hence MNE performance may positively moderate the (low) HCCITR to subsidiary survival relationship . On the other hand, MNEs with greater operating scale across foreign countries have more options to alter subsidiary operations (Chung et al., 2010), and hence MNE international experience may negatively moderate the above relationship.

Another aspect of ownership advantages that can aid further research entails governance across an MNE's network of foreign subsidiaries that can improve organizational effectiveness (Dunning, 1988; Lundan, 2009). In regard to MNE governance across its subsidiary network, much research has advocated for MNE regional strategies and the corresponding utilization of regional headquarters (RHQs) (e.g., Chakravarty, Hsieh, Schotter, & Beamish, 2017; Rugman & Verbeke, 2004; Verbeke & Asmussen, 2016). Since RHQs govern a smaller number of (regional) subsidiaries, and are more embedded in these geographic regions, they are arguably more effective at monitoring, controlling, and aligning the goals of these subsidiaries with their MNE parents than Corporate HQ. Consequently, RHQs are also empowered

to make strategic decisions specific to subsidiaries under their jurisdiction, including reallocating resources, expanding, downsizing, and termination. (Dellestrand & Kappen, 2012; Maskell, Bathelt, & Malmberg, 2006). Hence, the presence or absence of RHQ governance may moderate the relationship between HCCITR and subsidiary survival. For instance, an RHQ may be able to better balance subsidiary termination in one country due to poor performance and high HCCITR with increased investment in another country that has lower HCCITR and better performance.

In terms of subsidiary-level contingencies an interesting future research area is the relative scope or influence within the MNE of a subsidiary's operational mandate/portfolio. While this paper controls for a subsidiary's investment purpose diversity (i.e., efficiency, resource, market, and capital-seeking), it would be interesting to examine how operational diversity in relation to same parent subsidiaries affects the relationship between HCCITR and subsidiary survival. For instance, a subsidiary that (relative to other "sister" subsidiaries) takes on a more diverse role in an MNE's global value chain activities may be more likely to survive in high HCCITR countries, given its greater relative value within the MNE network (Ambos, Andersson & Birkinshaw, 2010; Lee, Chung, & Beamish, 2019). Hence, greater relative subsidiary scope could positively moderate the relationship between (low) HCCITR and subsidiary survival.

Limitations

We acknowledge several limitations in our study. One limitation is that we do not distinguish between subsidiaries that generate revenue and corresponding sales income versus others with no direct connection to revenue/sales. The latter may comprise “pure” manufacturing subsidiaries with sales that take place outside of the host country; or intermediate goods supply entities. In such cases, our assumption is that the HCCITR applies to MNE income that is reasonably attributable to non-revenue operations arising from the focal subsidiary. However, we acknowledge this may not necessarily or consistently apply across various tax jurisdictions. Future work may therefore seek to distinguish between revenue and non-revenue generating subsidiaries.

A second limitation arises from the lack of consideration of sub-national variation in corporate income tax for foreign subsidiaries within a host country. Applicable taxes vary based on subsidiary location within cities, provinces, states or specific economic zones, since sub-national regions do compete with each other to attract FDI (Wei, 2012). Hence examining sub-national survival/performance variation based on differential tax rates may be another promising area for future research.

Another limitation arises from the use of secondary data to conduct survival analysis based on the absence (exit) of the focal subsidiary in the database. We do not distinguish between a subsidiary going out of business due to market failure and an MNE level decision to terminate the subsidiary even if it can viably continue, as this distinction is impossible to empirically establish from our dataset. That said, this method of conducting survival analysis has long been established in the extant literature (e.g., Amezcua et al., 2013; Chung & Beamish, 2005; Dhanaraj & Beamish, 2004; Lu & Ma, 2008).

Our work is also limited by the fact that HCCITR is a statutory tax rate and does not account for country-specific depreciation allowances and interest deductions, or specific bi-lateral or multilateral tax rules (e.g., tax treaties between countries), tax breaks, exemptions, or credits. While statutory tax rates are highly correlated with actual tax rates (Clausing, 2009), they may not be the perfect proxy for actual tax rates firms pay. Future research may consider the use of a composite index such as the "Tax Attractiveness Index" developed by Keller & Shanz (2013) or government debt-to-GDP ratio as a proxy for tax competitiveness (Gan & Qiu, 2019). That said, given the strong correlations (of statutory with effective tax rates), the results are likely to remain consistent with effective tax rates. Further, the HCCITR effect on subsidiary survival remained significant, substantive, and directionally consistent after controlling for the Debt to GDP ratio in our regression model to account for other factors that statutory corporate tax rates may overlook, as suggested by Gan & Qiu (2019).

Our findings may have limited generalizability since they are based on a sample of Japanese MNEs and their subsidiaries. Tax management practices and corresponding FDI decisions may differ between MNEs from different countries of origin. Japanese MNEs generally repatriate profits back to Japan (e.g., through dividends, royalties, management charges, and transfer pricing) on a much larger

scale than their US counterparts. For instance, Tajika and Nakatani's (2008) findings indicate that about 44% of Japanese foreign subsidiaries repatriate dividends versus about 16% of US foreign subsidiaries. This is surprising since the corporate tax rate has been historically high in Japan – averaging about 42% over the last three decades (although it dropped to about 31% in 2015 and has remained at that level since). This profit repatriation phenomenon has led several researchers to suggest that Japanese MNEs lack sophisticated tax management practices; that they operate as a single entity driven by the need to centralize profit at home; and that they engage in opportunistic transfer pricing to inflate home country profit (e.g., Buckley & Hughes, 2001; Eden, Valdez, & Li, 2005). The actual reasons notwithstanding, foreign tax rates may matter less to Japanese MNEs relative to MNEs from other countries of origin. For instance, research suggests that tax haven countries receive much larger capital inflows from the US, UK, Germany, France, and the Netherlands, than they do from Japan (Hines, 2010). Hence, the results from our hypothesis test examining the effect of HCCITR on Japanese subsidiary survival may in-fact be conservative. We expect the effect to be larger for MNEs that pay a relatively greater share of their corporate taxes in host countries (e.g., US MNEs), and we call for research to investigate the same.

Finally, while our study focuses on foreign subsidiaries physically located in host countries, it is worth noting and examining the rise of digital MNEs, given emerging IB attention to the subject (e.g., Stallkamp & Schotter, 2019). The digital nature of these businesses may make profit shifting much easier (Fuest, Parenti, & Toubal, 2019) and thus further strengthen the relationship between HCCITR and the survival of foreign subsidiaries which play a key role in intangible asset shifting. Littlewood (2020) notes that digital MNEs such as Facebook, Google, and Uber derive large profits from numerous countries despite hardly paying any taxes (either because their physical establishment is small/non-existent or because most of the profit is attributable to IP owned by subsidiaries in other countries). On the other hand, backlash from affected governments and tax reform may lead to changes in how these businesses orchestrate international operations. For instance, as an interim measure pending international tax reform, several countries have announced plans to impose a digital services tax on gross turnover attributable to the host country.

Implications for Managers and Policymakers

IB academics are the principal audience for this paper - since too much scholarly work has ignored country tax rates. MNE managers have long understood that host country tax considerations are critical in making global strategic decisions. Nonetheless, there are several points which may be relevant to MNE managers. The first is that not only do low host country tax rates incentivize FDI, they are also far more important to subsidiary survival than several other variables that have been deemed traditionally important such as Cultural Distance, MNE International Experience, MNE Size, and Subsidiary Size. A second is our finding that the directional pattern (significance and substantiveness) of our results remains largely the same, irrespective of whether the country is a "tax haven" or not. Establishing a foreign subsidiary is capital intensive and entails considerable strategic and operational effort, and therefore subsidiary termination is often an option of last resort. Hence, our study may help MNE managers better assess the relative importance of corporate tax rates vis a vis other variables and host-country incentives in making FDI decisions. Policy makers should also note how critical (low) host country tax rates are to retaining foreign direct investment. We are not suggesting that governments lower their corporate tax rates, however they should very carefully consider the consequences of raising them.

NOTES

[1]Based on 2018 impact factors, these are: *Journal of International Business Studies, Journal of World Business, International Business Review, Journal of International Management, Asia Pacific Journal of Management, Global Strategy Journal, Management International Review*, and *Management and Organization Review*.

[2]Subsidiary Diversity = $_i\Sigma Pi*\ln(1/Pi)$, where Pi is the fraction of investment purposes corresponding to category i.

[3]R2d is a measure of variance explained by independent variables (IVs). It excludes categorical IVs in its computation, which for our model are Parent and Subsidiary Industry Sectors. The categorical nature of the dependent variable is immaterial.

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Table 1 Descriptive statistics and correlations

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1	Subsidiary Exit	0.03	0.17	1								
2	Host Country Corp. Income Tax Rate	31.69	7.66	0.024	1							
3	Subsidiary Age	12.74	10.35	-0.022	-0.033	1						
4	Subsidiary Employees	222.35	862.37	-0.018	-0.017	0.092	1					
5	Expatriate Number	4.44	9.33	-0.045	0.056	0.125	0.243	1				
6	Subsidiary Diversity	0.1	0.19	-0.009	-0.024	-0.019	0.014	0.012	1			
7	Parent Employees	18661.74	39214.6	0.021	0.015	0.080	0.184	0.185	-0.039	1		
8	Parent Return on Assets	3.56	5.98	-0.017	-0.058	0.013	0.008	-0.021	-0.011	-0.037	1	
9	Parent Equity Ownership	80.73	26.47	-0.040	0.027	0.050	-0.058	0.097	-0.003	-0.039	0.052	1
10	Parent International Experience	0.13	0.15	0.042	0.028	0.091	0.036	0.092	-0.054	0.466	-0.058	-0.136
11	Host Country Size	19217.45	16320.1	0.029	0.192	0.280	-0.072	0.036	-0.039	-0.004	0.030	0.315
12	Host Country GDP Growth Rate	3.48	4.09	-0.016	-0.184	-0.199	0.032	-0.026	0.023	-0.018	0.033	-0.092
13	Host Country Inflation Rate	3.55	5.75	-0.010	0.018	-0.066	0.039	-0.007	0.005	0.028	-0.019	-0.100
14	Host Country Debt to GDP	49.68	27.18	0.012	0.321	0.200	-0.029	0.021	-0.019	0.018	0.028	0.137
15	Host Country Soc. Prot. Exp. to GDP	11.16	8.65	0.026	0.514	0.149	-0.059	0.012	-0.060	0.039	0.004	0.237
16	Cultural Distance	4.01	1.19	0.011	-0.093	0.081	0.001	0.041	-0.004	-0.010	-0.026	0.039
17	Host Country Governance	0.64	0.9	0.039	0.236	0.204	-0.089	0.037	-0.047	-0.007	-0.033	0.289

	Variable	Mean	SD	10	11	12	13	14	15	16	17
10	Parent International Experience	0.13	0.15	1							
11	Host Country Size	19217.45	16320.1	0.032	1						
12	Host Country GDP Growth Rate	3.48	4.09	-0.084	-0.464	1					
13	Host Country Inflation Rate	3.55	5.75	0.053	-0.291	-0.029	1				
14	Debt to GDP	49.68	27.18	0.055	0.466	-0.386	-0.127	1			
15	Host Country Soc. Prot. Exp. to GDP	11.16	8.65	0.108	0.633	-0.392	-0.160	0.410	1		
16	Cultural Distance	4.01	1.19	-0.006	0.209	-0.195	-0.054	0.094	-0.174	1	
17	Host Country Governance	0.64	0.9	0.041	0.826	-0.519	-0.349	0.380	0.625	0.259	1

Correlations greater than |0.007| are significant at the 5% confidence level.
Number of: Observations (subsidiary-years) = 96,060; Subsidiaries = 13,468; Japanese parents (MNEs) = 1,712; Subsidiary exits = 2,924.
Descriptive statistics are computed for actual (unstandardized) variable values; correlations are computed for standardized values.
To save space, the table excludes the following categorical variables: Subsidiary Sector, Parent Sector.

Table 2 Survival analysis results

Explanatory Variables	(1) Controls			(2) Hypothesis			(3) 2SLS-Stage 1		(4) 2SLS-Stage 2		
	β	CRSE	HR	β	CRSE	HR	β	CRSE	β	CRSE	HR
Host Country Corp. Inc. Tax Rt.				0.288***	0.026	1.334					
Host Country Corp. Inc. Tax Rt. (Fitted)									0.255***	0.045	1.291
Host Country Soc. Prot. Exp. to GDP							0.697***	0.017			
Subsidiary Age	0.050*	0.020	1.051	0.037†	0.020	1.037	-0.065***	0.008	0.075**	0.022	1.078
Subsidiary Employees	0.008	0.032	1.008	0.014	0.026	1.014	-0.015	0.011	0.009	0.035	1.009
Expatriate Number	-0.664***	0.110	0.515	-0.689***	0.110	0.502	0.054***	0.008	-0.657***	0.110	0.518
Subsidiary Diversity	-0.031	0.034	0.969	-0.016	0.034	0.984	-0.005	0.010	-0.020	0.034	0.980
Subsidiary Sector (Manufacturing: Ref.)											
Subsidiary Sector (Trading)	-0.259***	0.058	0.772	-0.248***	0.058	0.780	-0.018	0.018	-0.246***	0.058	0.782
Subsidiary Sector (Services & Others)	0.247**	0.078	1.280	0.259***	0.072	1.296	0.059*	0.026	0.241**	0.081	1.273
Parent Employees	0.136**	0.041	1.145	0.138***	0.039	1.148	0.009	0.025	0.129**	0.044	1.138
Parent Return on Assets	-0.088**	0.030	0.916	-0.085**	0.031	0.919	-0.039***	0.007	-0.079**	0.030	0.924
Parent Equity Ownership	-0.182***	0.035	0.833	-0.174***	0.033	0.840	-0.075***	0.007	-0.151***	0.031	0.860
Parent International Experience	0.132*	0.055	1.141	0.128*	0.052	1.136	-0.060**	0.021	0.142*	0.057	1.153
Parent Sector (Manufacturing: Ref.)											
Parent Sector (Trading)	0.224*	0.089	1.252	0.256**	0.088	1.292	0.015	0.025	0.277**	0.087	1.320
Parent Sector (Services & Others)	-0.137	0.116	0.872	-0.109	0.111	0.897	-0.102***	0.027	-0.090	0.118	0.914
Host Country Size	-0.388***	0.048	0.678	-0.494***	0.048	0.610	-0.278***	0.023	-0.386***	0.048	0.680
Host Country GDP Growth Rate	0.027	0.029	1.027	0.039	0.030	1.040	-0.002	0.007	0.036	0.030	1.036
Host Country Inflation Rate	0.741	0.463	2.097	0.594	0.503	1.811	0.140	0.129	0.530	0.511	1.699
Host Country Debt to GDP	0.071**	0.022	1.074	-0.017	0.026	0.983	0.261***	0.009	-0.016	0.029	0.984
Cultural Distance	0.053**	0.020	1.055	0.045*	0.018	1.046	0.035*	0.015	0.039*	0.019	1.040
Host Country Governance	0.746***	0.047	2.109	0.816***	0.049	2.261	-0.036†	0.020	0.699***	0.045	2.012
Pseudo R-squared (R2d)		0.222			0.274						
Log-likelihood		-25122.153			-25043.713						
Chi-square / d.f.		1261.632 / 18			1418.513 / 19						
Chi-square difference				156.881***							

† $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Standardized variables used; β = Regression Coefficient, CRSE = Cluster Robust Standard Error, HR = Hazard Ratio.

Number of: Observations (subsidiary-years) = 96,060; Subsidiaries = 13,468; MNEs = 1,712; Subsidiary exits = 2,924.

R2d = R-squared type measure applicable to Cox regression (Royston, 2006), that excludes categorical independent variables.

Table 3 Percentage of sample subsidiaries by country (asterisks indicate tax havens)

Country	Subsidiary %
Argentina	0.17
Australia	2.39
Austria	0.24
Bahrain*	0.06
Bangladesh	0.07
Belgium	0.72
Brazil	1.61
Brunei	0.04
Bulgaria	0.03
Canada	1.47
Chile	0.25
China	19.09
Colombia	0.11
Costa Rica*	0.04
Czech Republic	0.30
Denmark	0.16
Ecuador	0.04
Egypt	0.06
El Salvador	0.02
Ethiopia	0.01
Finland	0.13
France	2.02
Germany	2.90
Greece	0.06
Honduras	0.01
Hong Kong*	5.31

Country	Subsidiary %
Hungary	0.27
India	1.71
Indonesia	3.05
Iran	0.07
Ireland*	0.23
Israel	0.05
Italy	0.94
Jamaica	0.02
Kuwait	0.01
Laos	0.03
Luxembourg*	0.21
Malaysia	3.29
Mexico	1.27
Morocco	0.03
Netherlands	1.95
New Zealand	0.38
Nigeria	0.09
Norway	0.11
Oman	0.02
Pakistan	0.09
Panama*	0.80
Peru	0.10
Philippines	1.76
Poland	0.32
Portugal	0.16
Puerto Rico	0.06

Country	Subsidiary %
Qatar	0.02
Romania	0.08
Russia	0.57
Saudi Arabia	0.13
Serbia and Montenegro	0.02
Singapore*	4.78
Slovak Republic	0.07
Slovenia	0.03
South Africa	0.21
South Korea	3.10
Spain	0.72
Sri Lanka	0.12
Sweden	0.36
Switzerland*	0.48
Taiwan	3.74
Tanzania	0.02
Thailand	6.19
Trinidad and Tobago	0.01
Turkey	0.21
UAE	0.28
UK	4.30
Ukraine	0.05
USA	18.32
Venezuela	0.12
Vietnam	1.72
Zambia	0.01